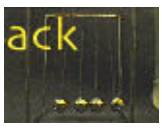
Newton's Laws

LAW # 3: EQUAL & OPPOSITE

Imagine a rocket is being launched from the earth. Hot gases are pushed out from the bottom of the rocket as the rocket is thrust upward. The force of the gases pushing against the surface of the earth is equal and opposite to the force with which the rocket moves upward. The motion of the rocket can be explained by Newton's third law, **for every action there is an equal and opposite reaction**. In other words, when one object exerts a force on another object, the second object exerts a force of equal strength in the opposite direction on the first object. Likewise, when a skeet shooter fires his shotgun at a clay disc flying through the air, he experiences the recoil upon the shotgun. The "kick" felt by the shooter is the reaction force upon the shotgun which is equal in magnitude to the force that pushes the pellets.

The following simple **activity** will help you investigate Newton's third law.

1. Blow up a balloon.
2. Hold the opening downward and release the balloon.
3. Repeat this several times, and observe what happens.
4. Now describe what happened using Newton's third law of motion.



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